The Fertilizer Institute
Nourish, Replenish, Grow

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The Fertilizer Institute Fact Sheet:
Texas Retail Fertilizer Facility
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The Fertilizer Institute (TFI) extends our thoughts and prayers to all of the people who have been impacted by the West Texas retail fertilizer facility tragedy. We are carefully monitoring the situation and will work with the industry to apply any lessons learned.

Fertilizer held at retail facilities is regulated at both the federal and state levels. The Chemical Safety Board (CSB) has been deployed to the accident scene. TFI has worked closely with the CSB and will serve as a resource should we be asked to do so. Other federal agencies include the Department of Homeland Security (DHS), the Environmental Protection Agency (EPA), the Occupational Health and Safety Administration (OSHA), the Department of Transportation (DOT), and U.S. Coast Guard's Maritime Transportation Security Administration (MTSA).

Below, please find information on nitrogen fertilizer for your use:

About Fertilizer

- Fertilizer is essential to life. Its use is responsible for 50 percent of the world's food production.

Ammonium Nitrate

- Ammonium nitrate (AN) is made from ammonia and nitric acid. It is a dry, solid material and represents approximately 2 percent of all directly applied nitrogen consumed in the United States.

- AN is used by farmers for its agronomic and environmental benefits. It is used primarily on pastureland, hay, fruit and vegetable crops.

- The leading AN consuming states are Missouri (20 percent of total U.S. consumption), Tennessee (14 percent), Alabama (10 percent) and Texas (8 percent).

- DOT hazardous materials regulations which are administered by the Pipeline and Hazardous Material Safety Administration (PHMSA) regulate AN in transportation. AN is classified as a 5.1 oxidizer and is normally transported under the DOT identification number UN 1942. The definition of UN 1942 is: AN, with not more than 0.2 percent total combustible material,

including any organic substance, calculated as carbon to the exclusion of any other added substance. As a 5.1 oxidizer AN in quantities of 1,000 lbs. or more must be placarded and meet certain container specifications. Companies that transport AN must train employees, register with DOT and comply will all other applicable PHMSA requirements for hazardous materials. DOT also considers ammonium nitrate to pose a security risk; therefore all placarded loads must have a security plan. Motor carrier drivers must have a commercial driver's license with a hazardous materials endorsement.

- MTSA also regulates waterfront facilities handling AN. All MTSA facilities must have a Coast Guard approved security plan. Vessels and barges carrying AN must comply with Coast Guard regulations. AN is considered a "certain dangerous cargo" when transported on waterways.

- DHS regulates AN fertilizer as a chemical of interest under the Chemical Facility Anti-terrorism Standards (CFATS). Under these security regulations, DHS defines AN just as does DOT. Under CFATS, any facility storing more than 400 lbs. of AN (or 2,000 lbs. for agricultural grade which normally has less than 0.2 percent combustible organics) is considered a theft threat and therefore must submit a "top screen survey application" to DHS. A top screen is used to determine whether the facility presents a high level of security risk. If so, the facility is required to submit a security vulnerability assessment (SVA) to DHS. DHS reviews the SVA and advises the facility as to its status as a covered facility. DHS has established four tiers of security risk– Tier 1 is the highest risk facilities and Tier 4 is the lowest risk facilities. A facility that is tiered in one of the four tiers must submit a site security plan. If DHS determines a facility is not a threat, no tier will be assigned and DHS will advise the facility that no further action is required.

- OSHA regulations for storage of AN, require emergency response plans, emergency response training, and compliance with all OSHA hazardous communication standards.

- EPA requires facilities to submit Material Safety Data Sheets (MSDS) to state and local emergency response agencies.

- The National Fire Protection Association (NFPA) has developed a code for storage of AN. AN by itself is not combustible. However, AN is an oxidizer and it can accelerate the burning of fuels when it is involved in a fire. Code 490 applies to the storage of AN, which includes storage in containers, storage in bulk, contaminants and fire protection. NFPA 490 recommends that should a fire break out where AN is stored, emergency responders should apply large volumes of water as quickly as possible.

- The fertilizer industry sought federal legislation to establish chain of custody traceability of AN in commerce. The *Secure Handling of Ammonium Nitrate Act of 2007,* which requires registration of purchasers and sellers of AN, was passed and signed into law in 2007. This rule is still pending with the DHS. Once regulations are finalized by the DHS, all sellers and purchasers of AN will be required to obtain a registration from DHS. Sellers of AN will be required to keep records of all sales.

Anhydrous Ammonia

- Nitrogen fertilizer, in the form of anhydrous ammonia, is produced in a chemical process that combines nitrogen from the air with hydrogen from natural gas.

- Ammonia is one of the basic building blocks of nitrogen fertilizer products. Ammonia is an essential element for plant, animal and human life. It is found in water, soil and air, and is a source of much needed nitrogen for plants and animals. Most of the ammonia in the environment comes from the natural breakdown of manure, dead plants and animals. Man-made sources of ammonia include fertilizers, power plants, mobile sources, and other manufacturing emissions. In certain crops, ammonia is the preferred fertilizer source because it contains 82 percent nitrogen and can be the most economical.

- Ammonia is a colorless, pungent, gas that is lighter than air. At minus 28 degrees ammonia becomes a liquid. Anhydrous ammonia is classified as a non-flammable gas but will burn with certain vapor concentration limits and with strong ignition. Fire hazard increases in the presence with oil or other combustible materials.

    - According the American National Standards Institute's (ANSI) Standard for Storage and Handling of Anhydrous Ammonia, the conditions favorable for ignition are seldom encountered during normal operations due to the high ignition temperature required. Most states have adopted the ANSI Standard, including Texas.

- Fertilizer retailers take exceptional care in handling ammonia with specialized equipment that is inspected and certified, personnel that are extensively trained, and specialized personal protective equipment for employees.

- TFI is an active member of the Transportation Community Awareness and Emergency Response program (TRANSCAER). Through this initiative, emergency response personnel in 27 states, including Texas, have received training on responding to accidents involving anhydrous ammonia. For more information on TRANSCAER in Texas, click here.

- Facilities storing anhydrous ammonia in quantities of 10,000 lbs. or more are required to have an EPA approved Clean Air Act Risk Management Program plan to address accidental releases of ammonia. Each facility covered under the act is required to conduct an offsite consequence analysis for a worst-case accident, a hazard assessment and an accident prevention program.

- According to OHSA, the lowest concentration of ammonia which is found to be irritating to the eyes, nose and throat of the most sensitive individuals is 50 parts per million (ppm).

- Without protective equipment, the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 30 minutes without experiencing or developing life-threatening health effects, is 500 ppm.

- Breathing 700 to 1,700 ppm results in coughing, bronchospasm and chest pain along with severe eye irritation and tearing. At levels greater than 5,000 ppm, ammonia causes chemical bronchitis, fluid accumulation in the lungs, chemical burns of the skin and is potentially fatal.

- Other nitrogen fertilizer materials can be made from anhydrous ammonia.

Conclusion:

Both ammonium nitrate and anhydrous ammonia are valuable fertilizers. The Fertilizer Institute and its members are committed to ensuring that these products are manufactured stored and used in a manner that keeps communities safe.